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Research Article

EFFICACY STUDY OF ACIDINOL SYRUP IN PATIENTS WITH ACID PEPTIC DISORDERS

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ABSTRACT

Context: Acid-related diseases involve a variety of disorders that can affect the esophagus, stomach and duodenum they also influence the quality of life and productivity of afflicted patients. Aim: Purpose of this study was to evaluate improvement in condition of Acid Peptic Disease in patient with Gastro intestinal complains as clinical symptoms along with Health-related quality of life and nighttime heartburn. Methods and Material: A prospective, observational, non-comparative, open-label, single centre study was conducted at Govt. Doon Hospital, Dehradun. Totally 50 patients Enrolled in the study with chronic complain of heartburn or acid regurgitation, were started on ACIDINOL treatment. Symptoms were assessed via questionnaire at baseline, 2nd week and 4th week visits. Results: Study has shown that 78% of patients reported Relief from general heartburn in less than 15 min. 83.6 % of patient responded good sleep after taking ACIDINOL syrup. At the end of the 4-week treatment period, patient reported 84.9% relief from abdominal pain, 88.9% relief from bloating, 80.9% relief from loss of appetite, 78.3% relief from nausea due to heartburn & 76.6% relief from dyspepsia. Conclusions: This study finding confirms the effectiveness of ACIDINOL syrup daily dose in severe heartburn as a predominant symptom also efficacy during 28 days therapy indicates that it can be used in peptic ulcer & GERD.

Keywords: GERD, Heartburn, Peptic ulcer, dyspepsia & Acidinol

INTRODUCTION

Heartburn occurs when acid from the stomach refluxes into the esophagus. It can be described as a burning sensation of mid-chest discomfort moving up toward the throat and neck.[1] Acid peptic diseases result from distinctive but overlapping pathogenic mechanisms that typically involve acid effects on diminished mucosal defense. Food and beverages including coffee, tea, chocolate and citrus; the regular use of aspirin and nonsteroidal anti-inflammatory drugs (NSAIDs); stress; and tobacco smoking are widely recognized as precipitators of heartburn.[2]

Acid-related diseases involve a variety of disorders that can affect the esophagus, stomach and duodenum. Gastroesophageal Reflux Disease (GERD) is the exposure of esophageal mucosa to acidic gastric contents, as well as pepsin and bile acids. A peptic ulcer is histologically defined as a mucosal defect that extends to or beyond the muscularis mucosa, with mucosal damage due to pepsin and gastric acid secretion. Duodenal Ulcers, the etiology of most duodenal ulcers is due to *H. pylori*. The biologic mechanism is increased acid output, and possibly, suppression of somatostatin.

Acid-related disorders influence the quality of life and productivity of afflicted patients and are common and important causes of morbidity and mortality.[3] Heartburn and other gastroesophageal reflux disease (GERD) symptoms experienced during the night commonly cause sleep disturbances, including arousal from sleep, increased wakefulness, and overall poor sleep quality.[4,5] Study of patients with GERD, 69% responded that they "experienced GERD symptoms when laid down to sleep at night"; 54% responded that they were "awakened at night by GERD symptoms"; and 29% responded that they were "awakened at night by coughing or choking because of fluid or an acid or bitter taste, or food in the throat." A survey of patients with heartburn found that 79% reported nighttime heartburn, and of those, 75% had symptoms that affected their sleep, and 40% believed that nighttime heartburn impaired their ability to function the next day.[6]

Health-related quality of life is more impaired in patients with nighttime symptoms of GERD than in healthy control subjects ($p < 0.001$) or in patients with GERD and no nighttime symptoms.[7] Additionally, heartburn symptom severity and nighttime heartburn are associated with reduced work productivity, particularly when nighttime heartburn interferes with sleep.[8]

It has been estimated that between 10 and 40% of patients with GERD fail to respond symptomatically, either partially or completely, to a standard-dose proton pump inhibitor (PPI).[9,10]

While dyspepsia is common in the community, most patients show no definite structural or biochemical abnormality at endoscopy.[11] However, therapy is often justified for these patients with functional dyspepsia, given the significant impact on quality of life and work productivity.[12] For those in whom the predominant symptoms are thought to be acid-related, such as epigastric pain or burning, a trial of acid suppression is often recommended if the patient is under 45-55 years of age without obvious organic disease.[13]

Peptic acid diseases arise from distinctive but overlapping pathogenic mechanisms, but ultimately have a common mechanism of tissue injury from acid. Goals of therapy include relief of symptoms, enhancement of ulcer healing in the affected mucosa (esophagus, stomach and duodenum) and prevention of recurrence. In broad terms, the development of potent, and safe drugs based on physiologic targets should be an impressive success in modern therapeutics. A key element of this success could be control of gastric acid.

Each 5 ml of ACIDINOL syrup contains

INGREDIENT	Amount
Yashtimadhu (Glycyrrhiza glabra Ext.)	50mg
Galo (Tinospora cordifolia)	50mg
Parval Pan (Trichosanthes dioica)	30mg
Trifala (Emblica offcinalis, Terminalia bellirica & Terminalia chebula)	100mg
Pitapapdo (Fumeria indica)	40mg
Adusi pan (Adhatoda vasica)	40mg
Neem chhal (Azadirachta indica)	40mg
Kariyatu (Swertia chirata)	40mg
Daruhaldi (Berberis aristata)	20mg
Chitrak (Plumbago zeylanica)	20mg
Indrajav (Holarrhena antidysenterica)	20mg
Satavari (Asparagus racemosus)	20mg
Dahamaso (Fagonia arabica)	20mg
SarjikaKshar (Sodiumbicarbonate)	80mg
Flavoured Syrup Base	qs

SUBJECTS AND METHODS

Study Design

The present study is a prospective, observational, non-comparative, open-label, single centre study designed to assess the effectiveness of a daily dose of ACIDINOL for a period of 4 weeks in the treatment of outpatients with Acid Peptic disease with chronic Gastro intestinal complains as clinical symptoms. This study is planned for total sample size of approximately 50 patients.

Key Inclusion Criteria

- Patient with complain of chronic heartburn.
- Each subject must be willing and able to provide written informed consent for the study.
- Male and female (nonpregnant & nonlactating) patients must be ≥ 18years of age.

Key Exclusion Criteria

- Any severe, unresolved, or unstable clinically significant disease (past or present) that may interfere with evaluation of the effects of the study medication.
- Patient who had used any other therapy for Gastro intestinal complains in near past (with in last four weeks).
- Any patient, study physician will think is not suitable for the study based on mental or physical condition.

All the patients will go through a complete physical examination. Relevant medical history and demographic details will be recorded with special reference to drugs used, smoking habits and usage of alcoholic beverages.

Dosage

One to two teaspoonful(s) three to four times as needed orally after meals given

Efficacy Assessment

Symptoms will be assessed by patients and by the investigator via questionnaire at baseline, 2nd week and 4th week visits. To assess the presence and severity of Acid Peptic disease and gastrointestinal (GI) symptoms, gastrointestinal symptom assessment questionnaire will be used. The questionnaire uses a five-grade scale, the questions concern symptoms during the study. The higher the scores, the more pronounced the symptoms. Patients' Quality of Life with complete resolution of sleep disturbances, relief of sleep disturbances also will be assessed too as a secondary outcome.

Safety Assessment

The safety and tolerability of study medications will be assessed based on adverse events spontaneously reported by patients or observed by the investigator during evaluation. A treatment emerged adverse event will be defined as any adverse event that occurred after commencement of allocated treatment or an adverse event that occurred prior to the allocated treatment but worsened in severity after commencement of the allocated treatment from the time of the first dose until 7 days after the last dose of study medication. In order to determine the presence of any adverse effects, patients were asked the standardised question 'Did the drug administered cause any complaint?' at each assessment.

Statistical Analysis

Analysis of demographic, anthropometric and other related data will be descriptive only. Analyses of efficacy will be based on the intention-to-treat (ITT) population. The primary objective will be analysed for protocol population, defined as ITT population excluding patients with major protocol violations. Primary and secondary outcomes will be score based on the questionnaire and the assessment of clinical symptoms by investigator at the end of the each visit. Mean total scores were calculated at baseline and each visits.

RESULT

Initially 50 patients Enrolled in the study with complain of heartburn or acid regurgitation. Out of which 46 patients 26 men and 18 women aged 23 to 57 years with mean (±SD) age of 34.4 (±8.3) completed the study. Their responses to therapy in terms of relief in the various symptoms are shown in Table 1, 2 & 3.

Table 1: Relief in Symptom of Acute Acid Peptic Disease after taking ACIDINOL syrup

Sr No.	Symptoms of Acid Peptic Disorders	Patient(%) reported Relief in symptom, (cumulative)		
		0 – 5 Min	5 – 15 Min	15 – 30 Min
1	Heartburn (General)	46.7 %	78.2 %	89.9 %
2	Heartburn (After meal)	34.3 %	71.5 %	90.3 %

Table-2: Patient's response to sleeping difficulty in Acute Acid Peptic Disease during ACIDINOL syrup treatment

Symptoms of Acid Peptic Disorders	Patient's response		
	Good sleep	Moderate Sleep	Bad sleep
Sleeping difficulty due to Heartburn	83.6 %	9.6 %	6.8 %

Table 3: Chronic Acid Peptic Disease Patient's response to gastrointestinal symptom assessment

Sr no.	Symptoms of Acid Peptic Disorders	Response of patient on five point Scale (Mean)			(%) Relief in symptoms compare to Baseline	
		Base line	2nd Week	4th Week	2nd Week	4th Week
1	Abdominal Pain	4.11	0.92	0.62	77.6 %	84.9%
2	Bloating	3.61	0.74	0.40	79.5 %	88.9 %
3	Loss of Appetite	4.09	1.07	0.78	73.8 %	80.9%
4	Nausea due to Heartburn	3.78	1.11	0.82	70.6 %	78.3 %
5	Dyspepsia	3.68	1.27	0.86	65.4 %	76.6 %

DISCUSSION

The results of this study shown that 78% of patients reported Relief from general heartburn in less than 15 min, whereas 71.5% patient reported relief from after meal heart burn. Significant percentage of patient reported relief from heartburn in the first 15 min of study during ACIDINOL treatment (Table-1). At the end of the 30 min approximately 90% patient suffering from acute heartburn reported relief from it.

Nighttime heartburn is associated with poor sleep quality and next day functionality. The results of this study demonstrate that out of all the patients suffering from sleeping difficulty due to Heartburn, 83.6 % of patient responded good sleep after taking ACIDINOL syrup (Table-2), result obtained from this study indicates that treatment of nighttime heartburn with ACIDINOL therapy improves sleep and daytime functioning.

As shown in Table-3, all other symptoms of Chronic Acid Peptic Disease (Abdominal Pain, Bloating, Loss of Appetite, Nausea due to Heartburn, Dyspepsia) improved significantly at the end of 2 weeks period. At the end of the 4-week treatment period, patient reported 84.9% relief from abdominal pain, 88.9% relief from bloating, 80.9% relief from loss of appetite, 78.3% relief from nausea due to heartburn & 76.6% relief from dyspepsia, a statistically significant improvement after treatment.

The ACIDINOL syrup used in this study was well tolerated. No adverse effects was neither reported by the patients nor observed by the investigator.

ACIDINOL Syrup is scientifically designed formula for Acid Peptic Disorders and Gastro intestinal complains. Ingredient present in it is reported to act as proton pump inhibitor and reduce gastric secretion in stomach. It also helps inhibiting activity of H.Pylori one of the causative organisms responsible for stomach ulcer. A natural basic component SarjikaKshar (sod. bicarbonate) in ACIDINOL will neutralize excess acid in the stomach. *Glycyrrhiza glabra Ext*. create mucilage, a thin film of mucous-like substance that coats the lining of the stomach and the esophagus, preventing damage from stomach acids and acid reflux.[14] The anti-oxidant property of *Azadirachta indica* reduces damaged gastric epithelium which gives control on gastric hyperacidity. *Tinsopara cordifolia* induce marked protective action against stress induced acid secreton and useful in dyspepsia, vomiting, flatulence, acid gastritis and acid diarrhoea due to acidity of intestinal canal or acid dyspepsia.[15] *Adhatoda vasica* suppresses gastric damage by reducing gastric volume and increases the pH value. *Asparagus racemosus* naturally inhibits secretion of stomach acid. Also dropping free acidity, total acidity and protecting the lining of the stomach. Triphala is an Ayurvedic combination of three herbs that possess unique laxative qualities as well as the ability to nourish and regulate the gut. The ethanolic extract of *Swertia chirata* significantly reduced the intensity of gastric mucosal damage by decrease in gastric secretion.[16] *Berberis aristata* have beneficial role in gastroduodenal ulcer.[17] *Plumbago zeylanica* L. had the highest inhibitory effects against *H. pylori*.[18] *Holarrhena antidysenterica* is used in different intestinal disorder such as diarrhoea, dysentery, amoebiasis and giardiasis.

The primary objective of this non-comparative, open-label study was to assess the effectiveness and tolerability profile of ACIDINOL syrup in the management of patients of Acid Peptic Disease with heartburn as the predominant symptom. Although open-label surveillance studies have some disadvantages, such as no comparison group. Findings of these studies are useful to clinicians because valuable data regarding actual conditions of drug therapy in daily practice are provided.

CONCLUSION

This study finding confirms the effectiveness of ACIDINOL syrup daily dose of One to two teaspoonful(s) three to four times as needed in patients with Acid Peptic Disease and moderate to severe heartburn as a predominant symptom. Result of earlier studies done on individual herbs and no side effect and shown efficacy during 28 days therapy indicates that ACIDINOL can be used in the long term heartburn associated with peptic ulcer & GERD.

In this non-comparative, open-label, prospective, multicentre study ACIDINOL syrup has shown clinical effectiveness in various gastric irregularities such as Abdominal Pain, Bloating, Loss of Appetite, Nausea due to Heartburn & Dyspepsia. ACIDINOL treatment is found to be complete resolution and relief of acid peptic disease associated sleep disturbances and day time discomforts for actual conditions of use in daily practice.

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REFERENCE

1. Vakil N, van Zanten SV, Kahrilas P, Dent J, Jones R. The Montreal definition and classification of gastroesophageal reflux disease: a global evidence-based consensus.*Am J Gastroenterol.* 2006;101:1900-1920.
2. Del Valle J, Chey WD, Schmeiman JM, et al. Acid peptic disorders. In: Yamada T, Aplers DH, Kaplowitz N, et al, eds. *Textbook of Gastroenterology*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2003:1321–1376.
3. Shin JM, Vagin O, Munson K, Kidd M, Modlin IM, Sachs G. Molecular mechanisms in therapy of acid-related diseases. *Cell Mol. Life Sci.*65,264-281 (2008).
4. Chand N, Johnson DA, Tabangin M, *et al*. Sleep dysfunction in patients with gastro-oesophageal reflux disease: Prevalence and response to GERD therapy, a pilot study. *Aliment Pharmacol Ther* 2004;20: 969-74.
5. Freidin N, Fisher MJ, Taylor W, *et al*. Sleep and nocturnal acid reflux in normal subjects and patients with reflux oesophagitis. *Gut* 1991;32: 1275-9.
6. Farup C, Kleinman L, Sloan S, *et al*. The impact of nocturnal symptoms associated with gastroesophageal reflux disease on health-related quality of life. *Arch Intern Med* 2001;161: 45-52.
7. Shaker R, Castell DO, Schoenfeld PS, *et al*. Nighttime heartburn is an under-appreciated clinical problem that impacts sleep and daytime function: The results of a Gallup survey conducted on behalf of the American Gastroenterological Association. *Am J Gastroenterol* 2003;98: 1487-93.
8. Dean BB, Crawley JA, Schmitt CM, *et al*. The burden of illness of gastro-oesophageal reflux disease: Impact on work productivity. *Aliment Pharmacol Ther* 2003;17: 1309-17.
9. Inadomi JM, McIntyre L, Bernard L, *et al*. Step-down from multiple- to single-dose proton pump inhibitors (PPIs): a prospective study of patients with heartburn or acid regurgitation completely relieved with PPIs. Am J Gastroenterol 2003; 98:1940–1944.
10. Gallup Organization. The 2000 Gallup Study of Consumers' Use of Stomach Relief Products. Princeton: Gallup Organization; 2000.
11. Talley NJ, Vakil N, Moayyedi P. AGA Technical review on the evaluation of dyspepsia. Gastroenterology 2005; 129: 1756-80.
12. El-Serag HB, Talley NJ. Systematic review: health-related quality of life in functional dyspepsia. Aliment Pharmacol Ther 2003; 18: 387-93.
13. Anonymous. Endoscopy in the evaluation of dyspepsia. Health and Public Policy Committee, American College of Physicians. Ann Intern Med 1985; 102: 266-9.
14. Van Marle J, Aarsen PN, Lind A, *et al*. Deglycyrrhizinised liquorice (DGL) and the renewal of rat stomach epithelium. *Eur J Pharmacol*. 1981;72:219-225.
15. Data base on medicinal plant used in Ayurveda, CCRAS, Vol-III, P. No. 256-260.
16. Rafatullah S, Tariq M, Mossa JS, *et al.* Protective effect of Swertia chirata against indomethacin and other ulcerogenic agent-induced gastric ulcers. Drugs Exp Clin Res 1993;19(2):69-73.
17. Sharma PC, Yelne MB, Dennis TJ, editors. Database on Medicinal Plants used in Ayurveda. New Delhi: CCRS; 2001.
18. Yuan-Chuen Wang, Tung-Liang Huang. Anti-*Helicobacter pylori* activity of *Plumbago zeylanica* L. FEMS Immu & Med Microbiology 2005: 43(3): 407-412.